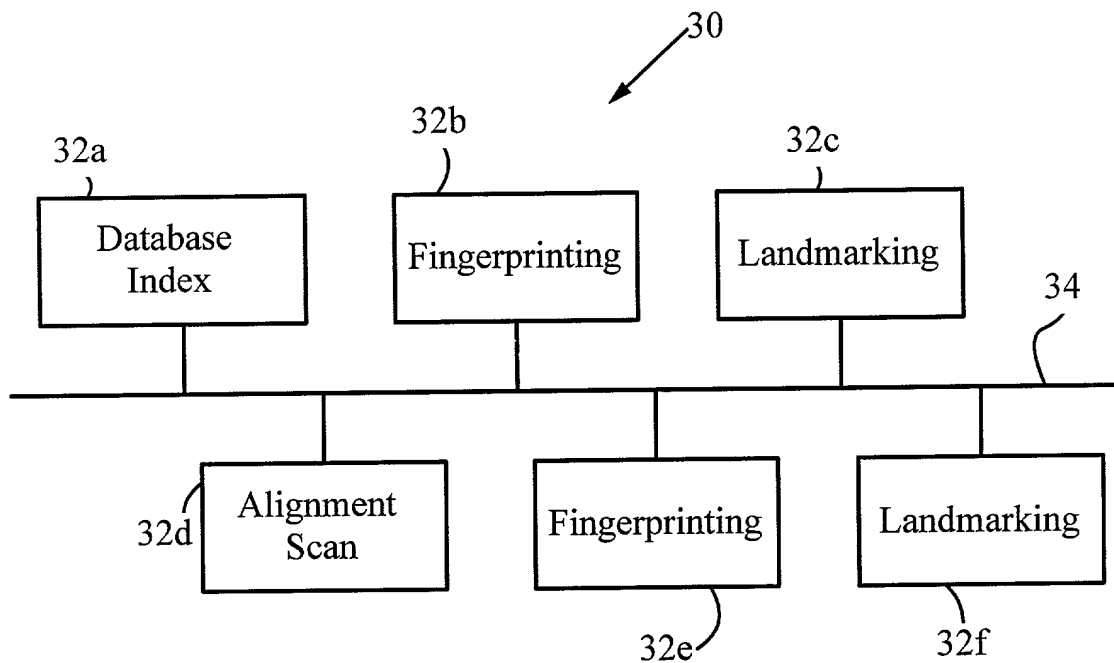
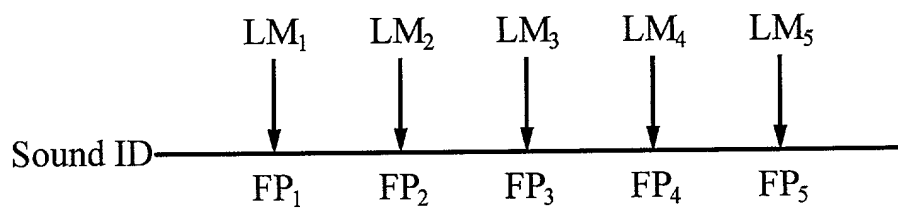


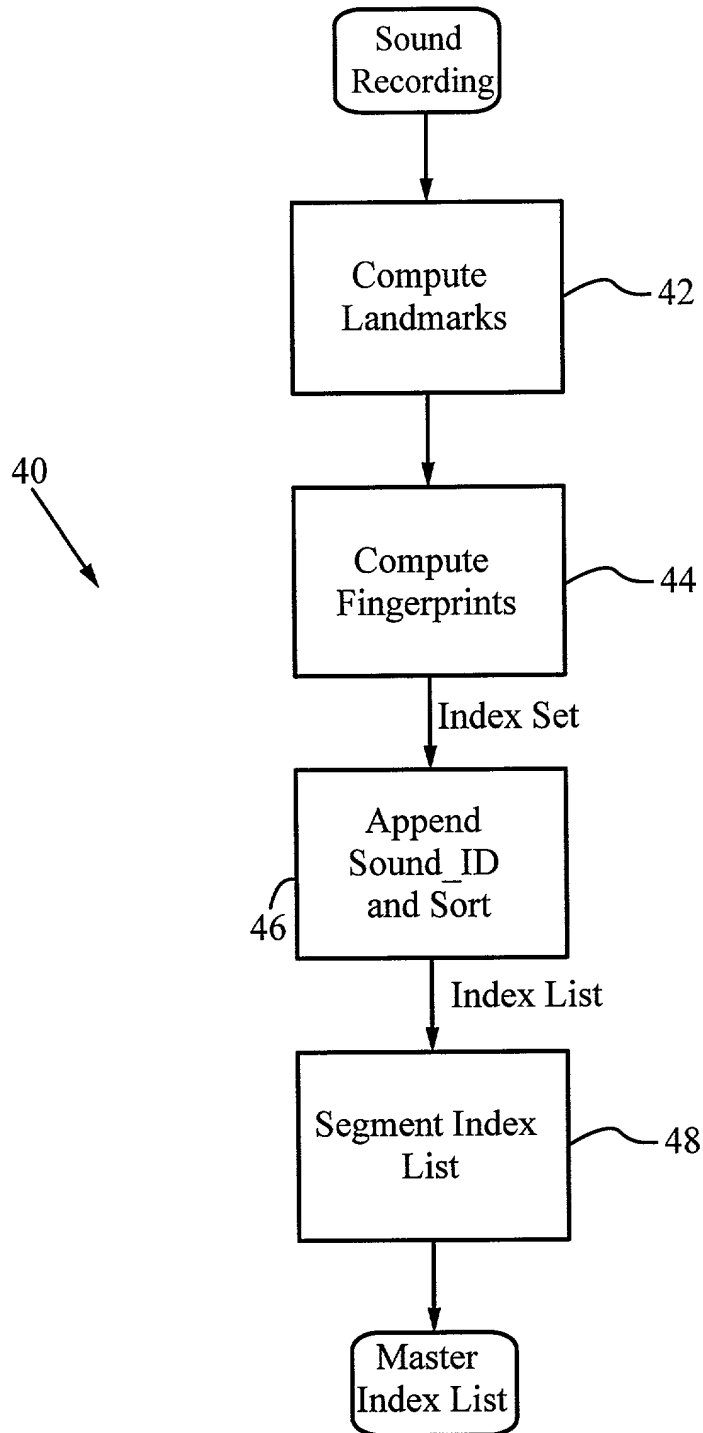
**FIG. 1**



**FIG. 2**

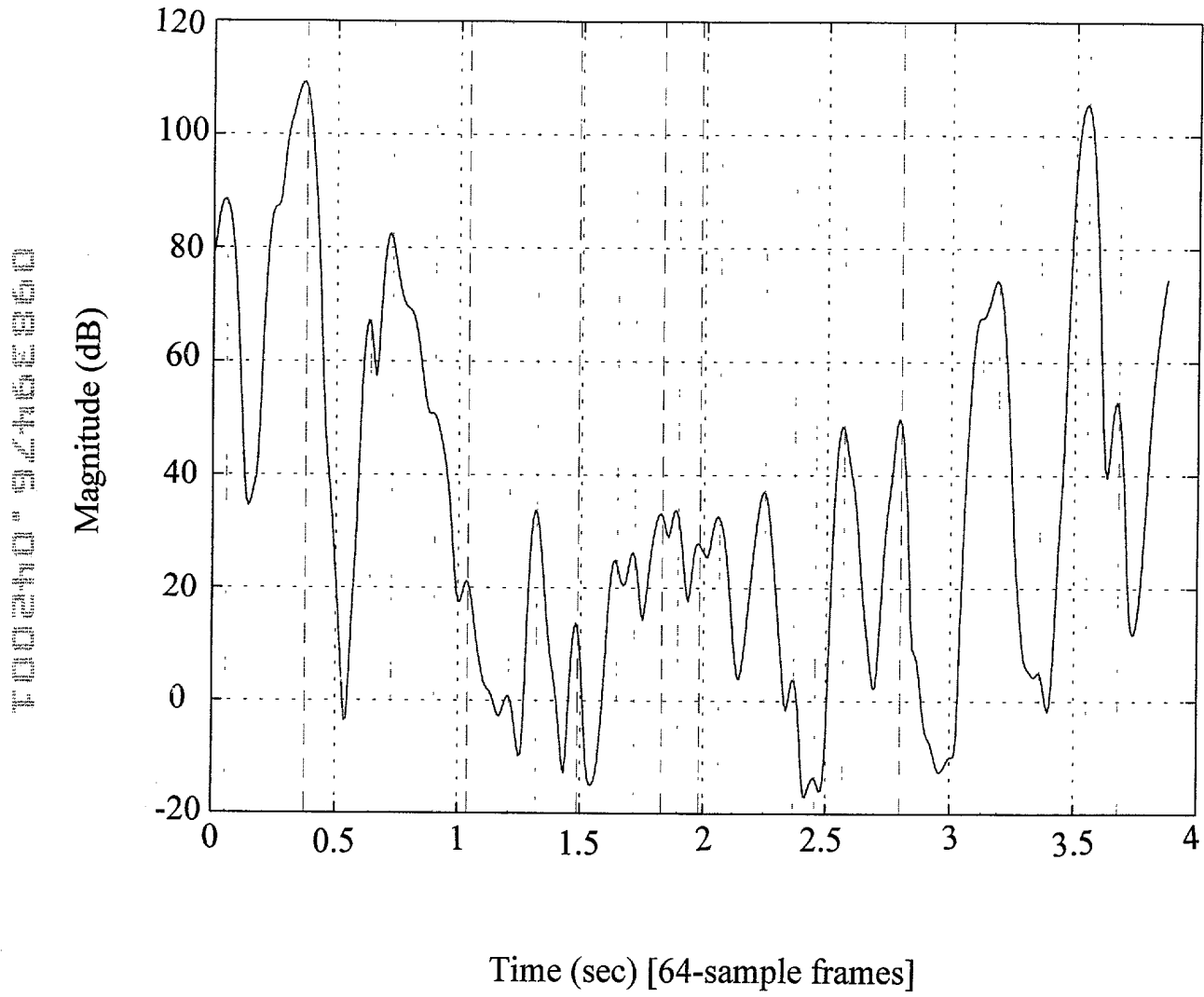


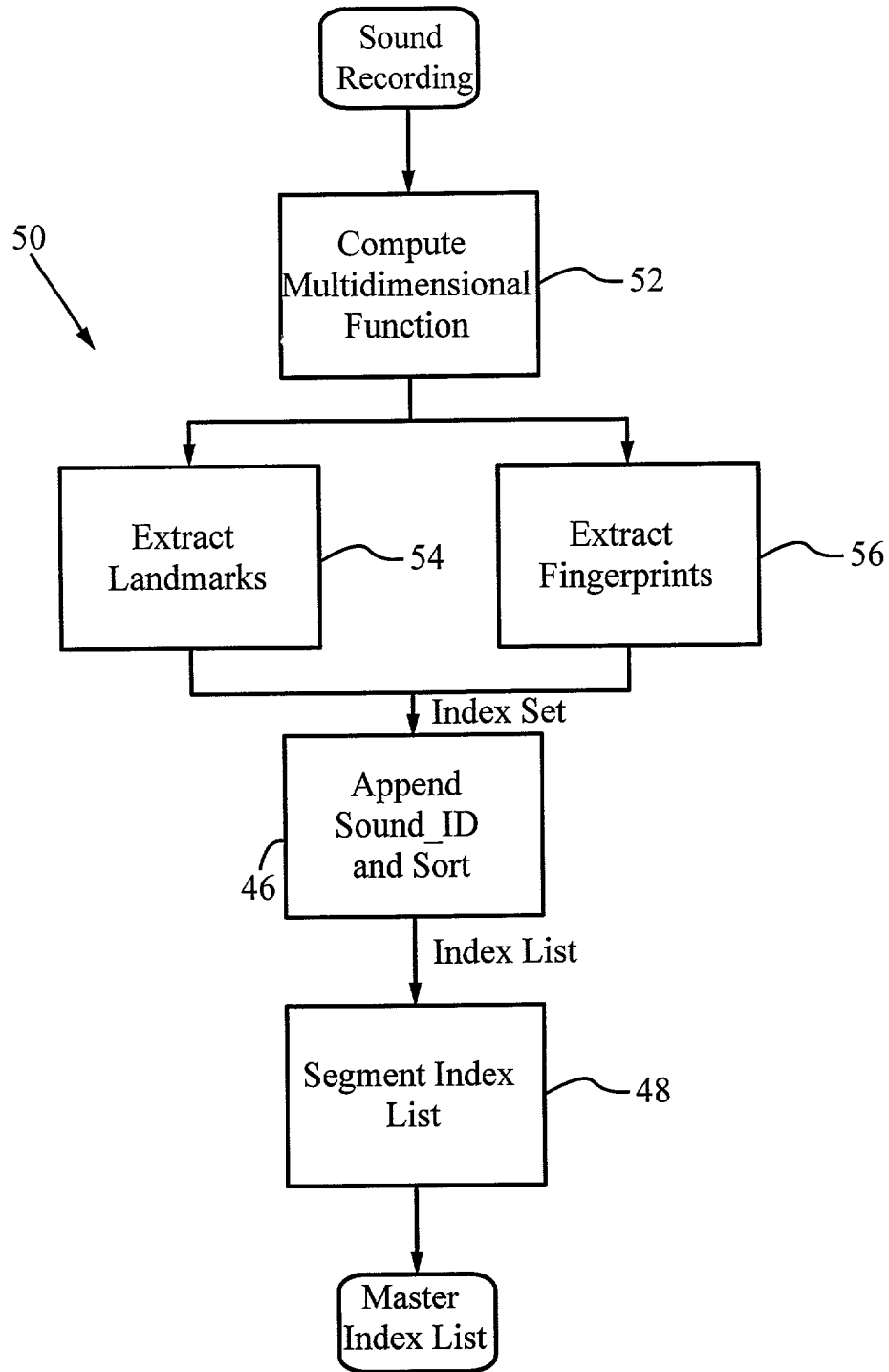
**FIG. 4**



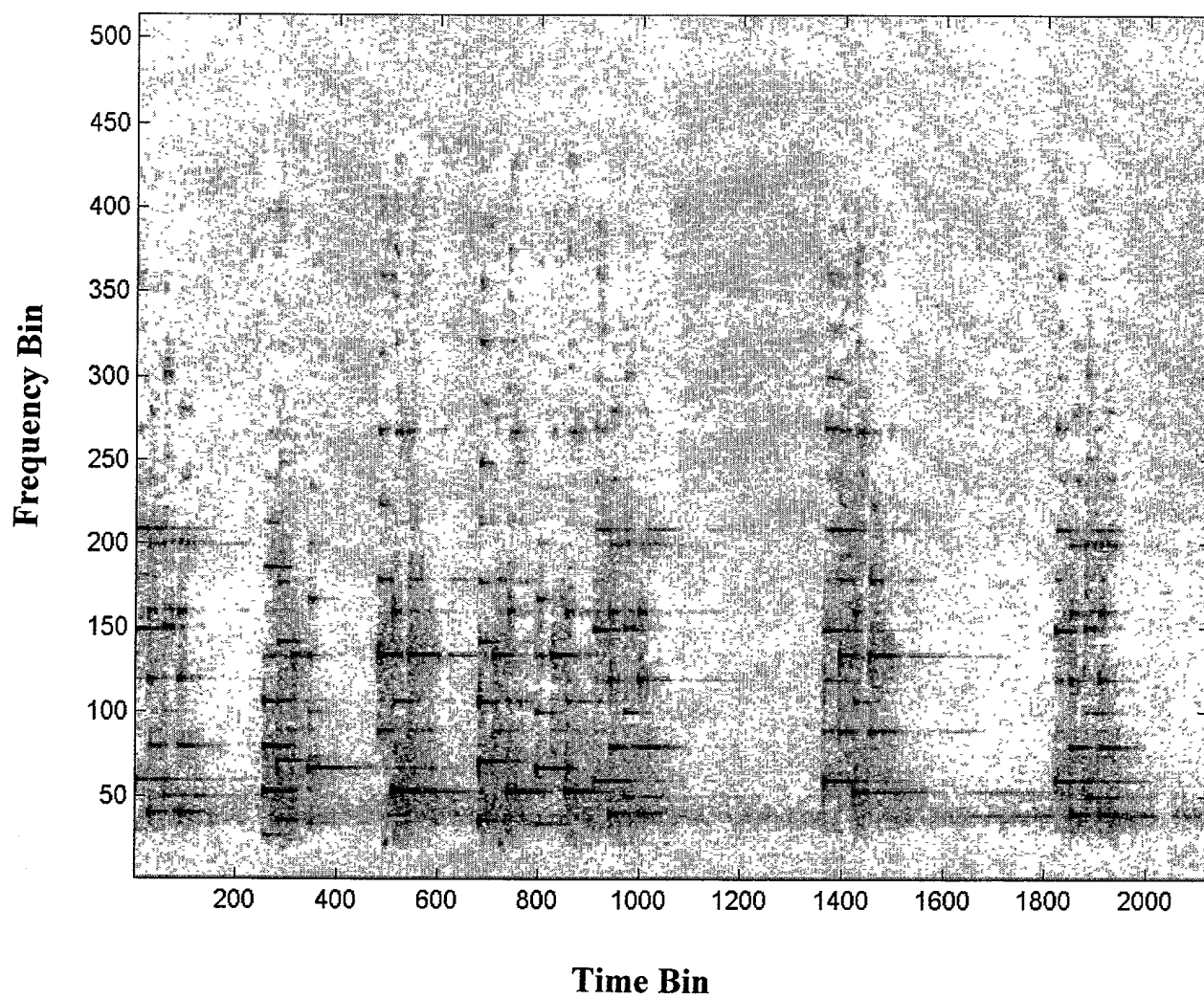
**FIG. 3**

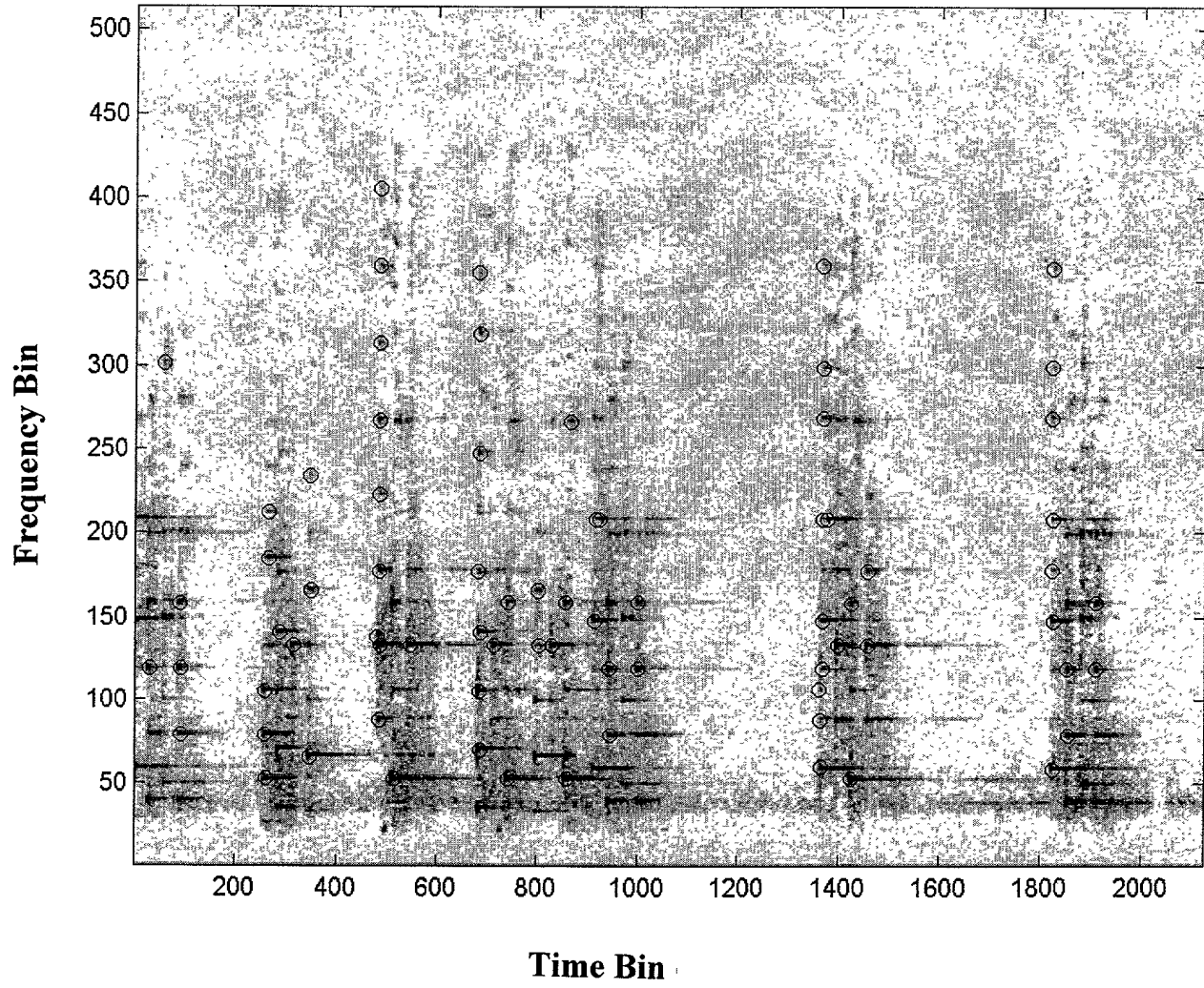
## Landmarks in L4 Norm

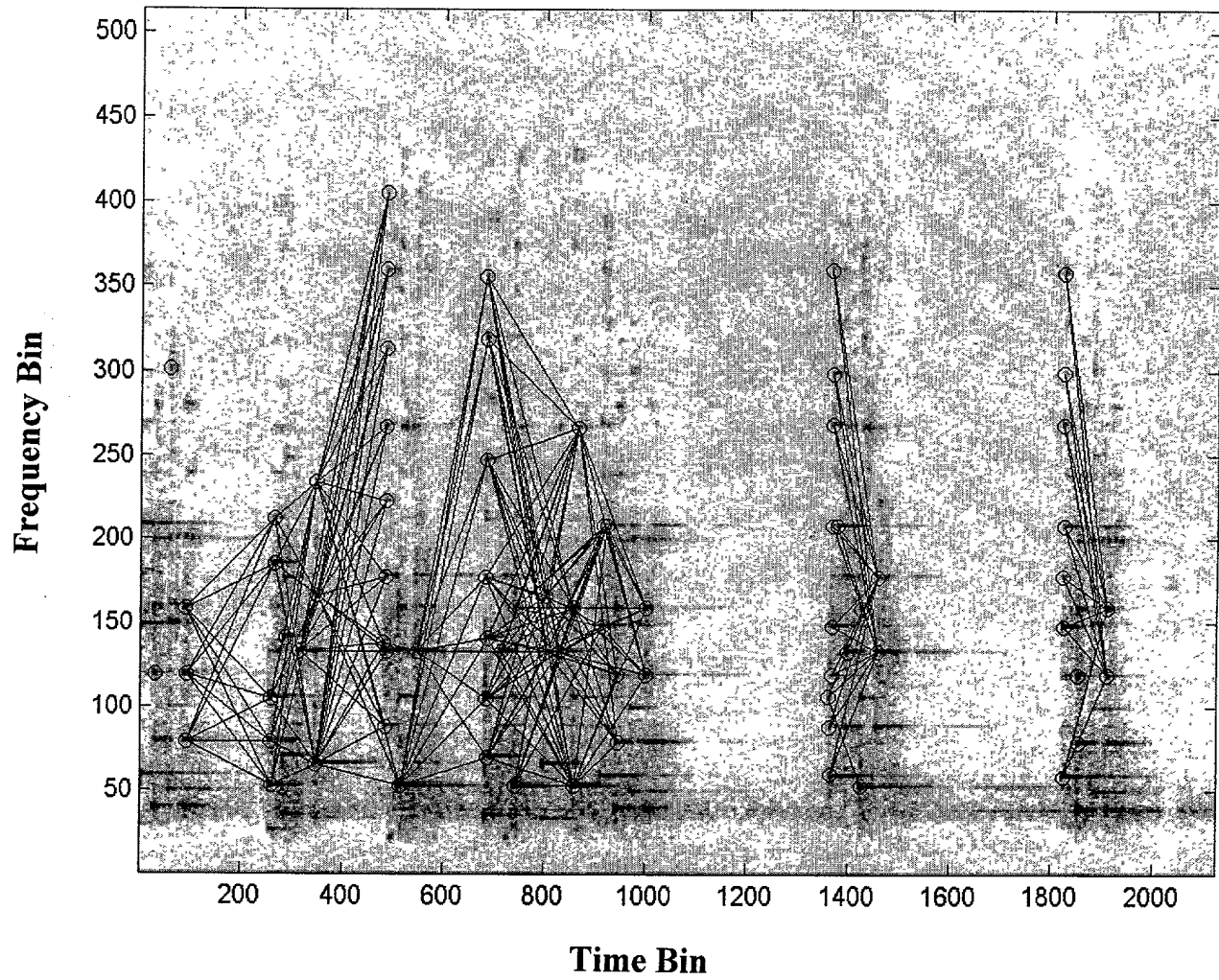
**FIG. 5**



**FIG. 6**

**FIG. 7A**

**FIG. 7B**

**FIG. 7C**



Index Sets

$$\begin{array}{ccc}
 \text{Sound\_ID}_1 & & \text{Sound\_ID}_n \\
 \left[ \begin{array}{c} (\text{fingerprint}_1, \text{landmark}_1) \\ (\text{fingerprint}_2, \text{landmark}_2) \\ \vdots \\ (\text{fingerprint}_m, \text{landmark}_m) \end{array} \right] & \dots & \left[ \begin{array}{c} (\text{fingerprint}_p, \text{landmark}_p) \\ (\text{fingerprint}_{p+1}, \text{landmark}_{p+1}) \\ \vdots \\ (\text{fingerprint}_t, \text{landmark}_t) \end{array} \right]
 \end{array}$$

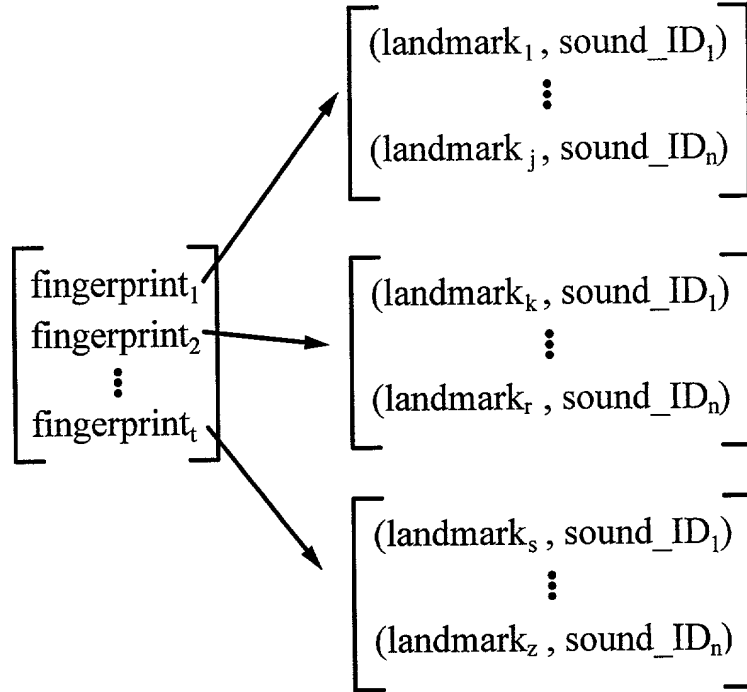
**FIG. 8A**

Index List

$$\left[ \begin{array}{c} (\text{fingerprint}_1, \text{landmark}_1, \text{sound\_ID}_1) \\ (\text{fingerprint}_2, \text{landmark}_2, \text{sound\_ID}_1) \\ \vdots \\ (\text{fingerprint}_m, \text{landmark}_m, \text{sound\_ID}_1) \\ \vdots \\ (\text{fingerprint}_p, \text{landmark}_p, \text{sound\_ID}_n) \\ (\text{fingerprint}_{p+1}, \text{landmark}_{p+1}, \text{sound\_ID}_n) \\ \vdots \\ (\text{fingerprint}_t, \text{landmark}_t, \text{sound\_ID}_n) \end{array} \right]$$

**FIG. 8B**

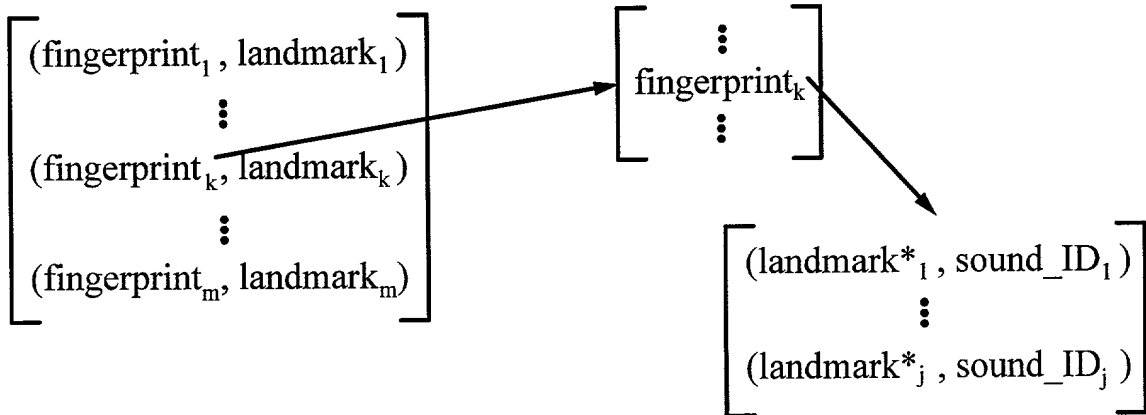
Master Index List



**FIG. 8C**

Sample Index Set

Master Index List



**FIG. 9A**

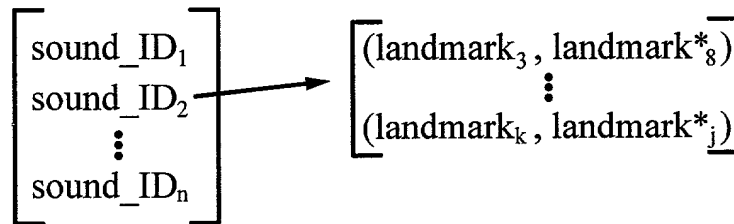
Candidate List

$$\begin{bmatrix} (\text{landmark}_1, \text{landmark}^*_1, \text{sound\_ID}_1) \\ \vdots \\ (\text{landmark}_k, \text{landmark}^*_j, \text{sound\_ID}_j) \\ \vdots \\ (\text{landmark}_m, \text{landmark}^*_r, \text{sound\_ID}_n) \end{bmatrix}$$

**FIG. 9B**

Candidate Sound IDs

Scatter List



**FIG. 9C**

Winning file located: linear correspondence found

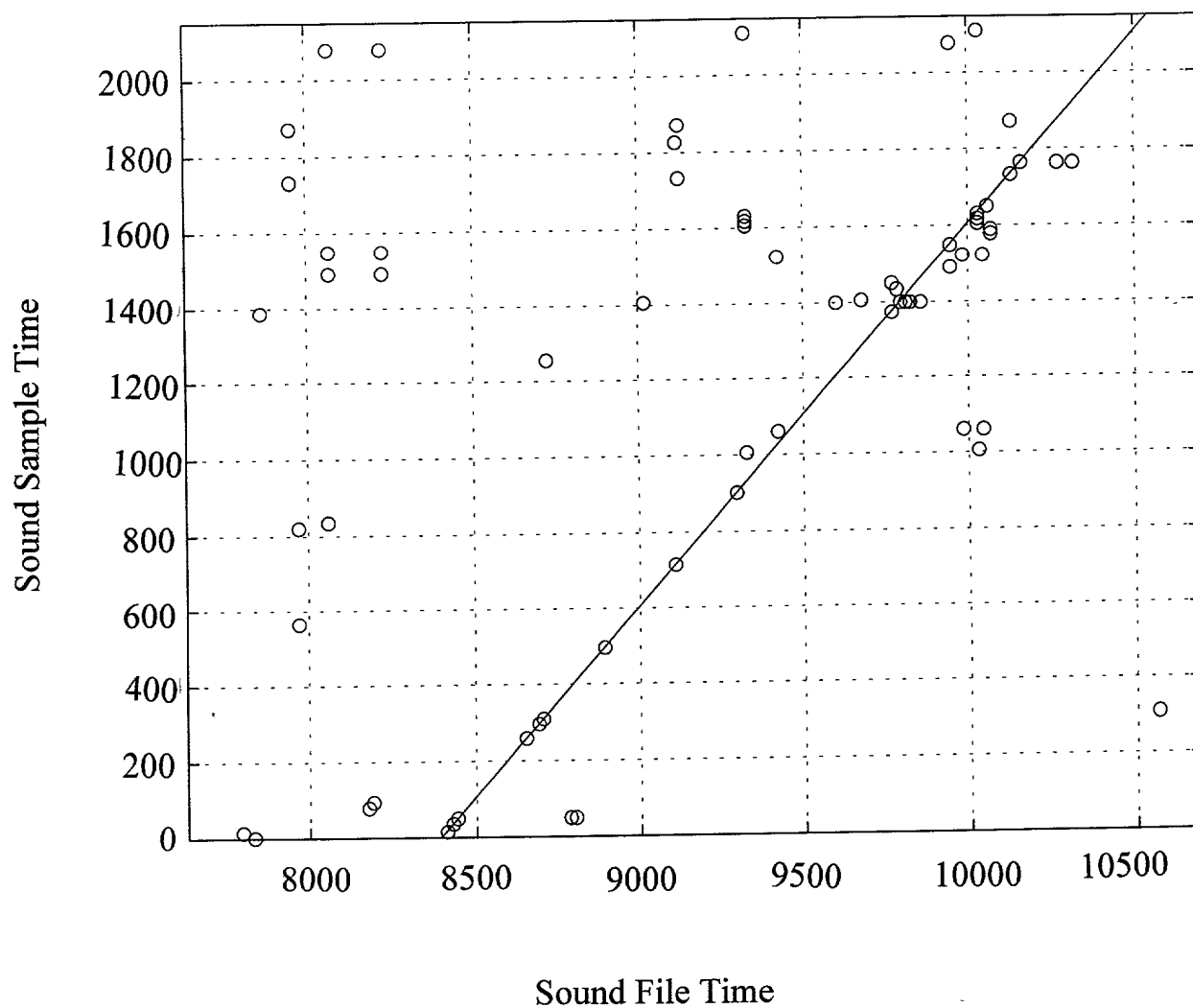
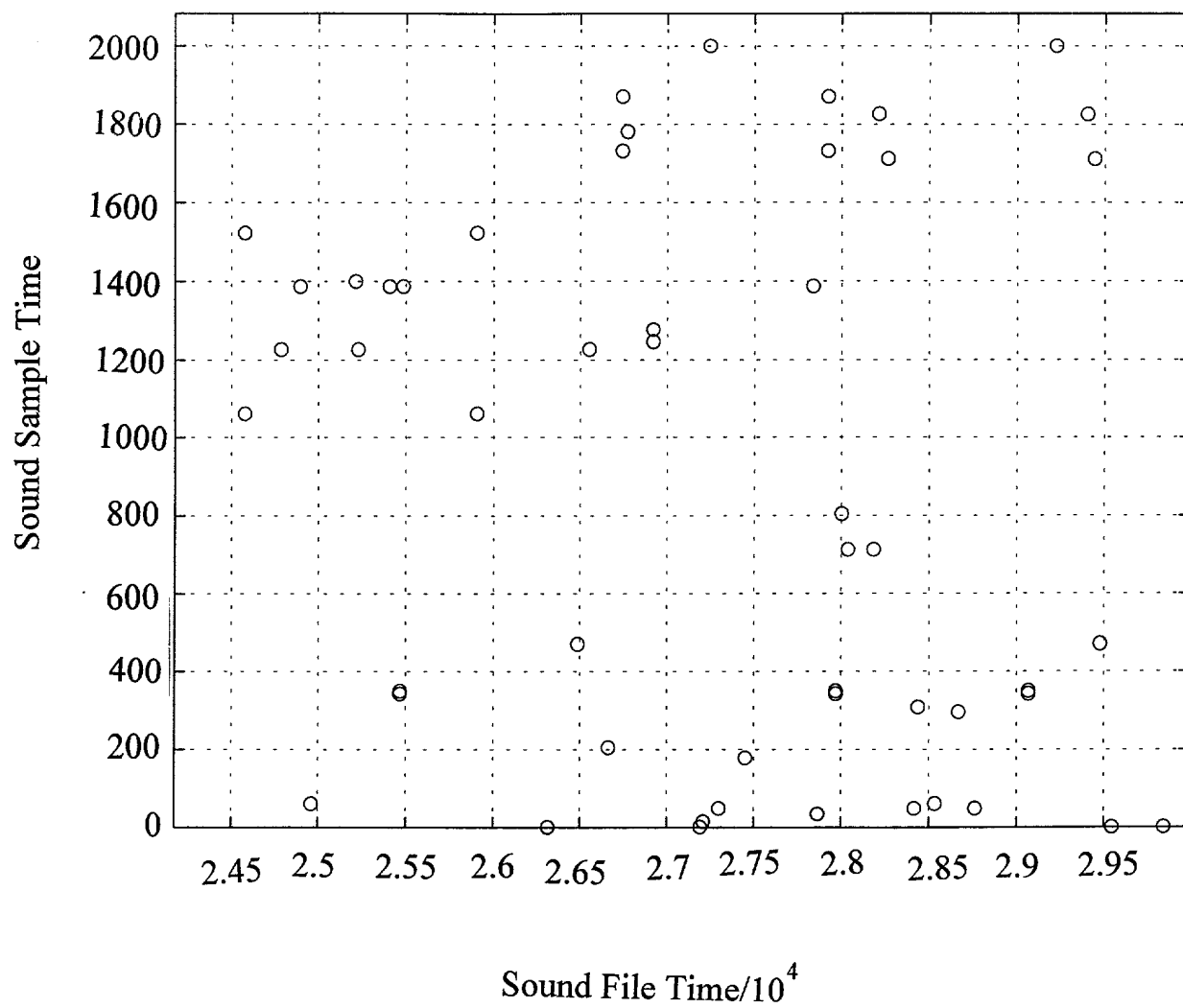


FIG. 10A

Winning file not located: linear correspondence not found



**FIG. 10B**